PALMER.(E.R.)

REPORT ON THE PROGRESS OF GENITO-URINARY SURGERY.

SOME POINTS IN THE MANAGEMENT OF URETHRAL STRICTURE.

THE SPECIFIC MICROBE OF GONORRHEA.

BY

E. R. PALMER, M. D.

Professor of Physiology and Pathological Histology, Medical Department University of Louisville.

Reprint: American Practitioner and News.

SURGEON GEN'L'S OFFICE
347
LIBRARY

LOUISVILLE, KY:
JOHN P. MORTON AND COMPANY.
1888.

REPORT ON THE PROGRESS OF GENITO-URINARY SURGERY.*

In view of the large number of papers promised for the present meeting, I have determined to occupy a comparatively short portion of your time with this report, and to give as succinctly as is possible some of the most interesting of the novelties that have appeared in genito-urinary literature since our last meeting. Gonorrhea still keeps firm hold on its old place among the obstinate and often intractable diseases, and as a result many novel suggestions appear in the journals of the day looking to its speedy cure.

It seems more and more firmly established that, be the treatment what it may, a cure in six weeks is a good result, and that a discharge from the urethra that yields to any treatment in two to four days is a bastard gonorrhea that would have in all probability

*Read at the Thirty-third Annual Meeting of the Kentucky State Medical Society.

SURGEON GEN'L'S OFFICE LIBRARY

gotten well itself if let alone. Retrojection, about which so much has been said in the last year or two, is useful in subacute claps, and especially in those so frequently seen that represent the lighting up of old cases imperfectly cured. In a large percentage of such cases the prostatic urethra, and often the bladder as well, are involved, so that retrojection, to accomplish greatest good, should be carried out by injection into the bladder, the fluid to be discharged by the patient's volition after withdrawal of the catheter. In such cases a fourth or a third of a grain of bichloride of mercury to the pint may be advantageously used in a supersaturated solution of boric acid. The formula for the latter is as follows:

Calcined magnesia..... ℥ iss;
Boric acid..... ℥ xij;
Water..... O viij.

Triturate the first and second; add the water; agitate and filter twice. This represents about forty-five grains of the acid to the ounce, or double the strength of the ordinary saturated solution. Such a wash should be heated to near 100° F. before using. For the urethra itself irrigation

with a Kiefer nozzle, as described last year, is preferable to retrojection. Stronger bichloride solutions and the super-saturated boric still hold first place for this purpose. I think I have materially shortened the course of some cases by allowing the patient to use an ordinary injection immediately after irrigation, and also twice or three times during the day. In addition to the usual zinc or lead, or hydrastia washes, I have had excellent results with three per cent to five per cent solutions of thalline sulphate and the following:

Quiniæ bisulph ..... ℈ j;
Glycerinæ..... ʒ ss;
Aq..... ʒ iijss. M.

In the internal treatment of gonorrhea, and especially in gonorrheal cystitis, a great number of antiseptic agents have been brought forward. Some prove beneficial in one case, some in another. Among them are terebene, oil of wintergreen, naphthaline, pyridine, salol, and creoline. The latter has been especially lauded by Fröhner and Von Esmarch as "a coal-tar derivative superior to carbolic acid," while according to Gawalowski it is a *mixtum compositum*

containing about a dozen constituents mechanically incorporated—what in our parlance would be denominated a *nostrum*. Oil of wintergreen, which was recommended recently by Taylor in gonorrheal rheumatism, has since been advocated by Wyeth as the equal of boric acid for the sterilization of urine by internal administration. Naphthaline is excreted by the kidneys chemically unchanged. In large doses, one fourth to one half dram, it produces distressing symptoms. It has in toxic doses produced cataract in the rabbit. In doses of five grains thrice daily its beneficial effects in gonorrheal cystitis are often pronounced. With terebene and pyridene I have had but little experience, but salol, like the wintergreen and naphthaline, is a most excellent agent.

The gonococcus has held its place as a pathogenic agent. Its relation to questions of medico-legal interest should make the surgeon exceedingly careful in his examination. This specific micrococcus may be discerned in a dry mount with one eighth inch lens combined with a B eye-piece. According to Professor Welch, of the Johns

Hopkins University, when zoöglia of diplococci are found in the pus serum of a urethral discharge, the discharge is of specific origin. Where extreme accuracy is desired, a high power immersion lens and the bleaching process of Roux should be applied. The fact that these germs thrive in acid media has led Castellan, Rohé, and others to recommend alkaline injections.

In immediate connection with the subject of gonorrhea comes the exceedingly interesting question of sterility. Up to within a few years it was generally asserted that in sterile unions eight times out of ten the fault lay with the woman, and in most such cases her barrenness was vaguely explained by the terms, version, flexion, stenosis, atresia, acridity, etc.

Gross, in the third edition of his work on Disorders of the Male Sexual Organs, places the percentage of sterility in the male, in barren unions, to one case out of every six. Kehrer, of Heidelberg, found in ninety-six men of unfruitful union whom he examined: Impotent, 3; having semen containing dead spermatozoa, 29; deficient spermatozoa, 11; excessive spermatic fluid, 53. The percent-

age of sterility in the male, according to this, being 33.32. Both of these, as well as other authorities not quoted, place gonorrhea as the chief cause of this sterility. Indeed, it may be safely asserted that in nearly every case where double gonorrheal epididymitis has existed sterility is among the results. Fournier has examined twenty-one cases of bilateral epididymitis, and found in the discharges of eighteen no spermatozoa.

In the matter of sterility from gonorrhea in the female, Professor Goodell, in a lecture delivered upon the subject in October last, after quoting Noeggerath, who has asserted that "a woman who has once had gonorrhea never afterward conceives," said, "Personally I can not recall a case in which a woman bore a child after suffering with gonorrhea." This to my mind is hardly a scientific way of putting so grave a question, especially coming as it does from one so high in the ranks as Dr. Goodell. The frequency of gonorrheal salpingitis has until quite recently been underestimated; but it seems to me that here, as in the analogous epididymitis of the male, a double pyosalpinx should be necessary to effect bar-

renness. It is a matter in which statistics are not without our reach, and one where statistics are badly needed. In the same lecture Dr. Goodell clearly lays down the correct law for treatment of gonorrhea in the female, namely, the application by the surgeon of strong solutions of mercuric bichloride, not only to the vagina, but to the cavity of the womb also, swabbing the latter with 1 to 1,000 solution, "in the hope even that some of the fluid may get into the tubes as well." I have recently had the temerity to treat a cyprian suffering with right gonorrheal salpingitis by injections, through a patulous os, of a hot 1 to 1,000 solution, directing the stream with considerable force toward the affected side, thereby materially lessening the pain, swelling, and discharge. M. Fritsch recommends, in the treatment of vaginal gonorrhea, two irrigations to the recumbent patient daily, consisting of twenty grams of chloride of zinc in equal parts of water, dissolved in a quart of water at a temperature of 90° F. Contrary to usually taught doctrines, urethral infection is the rule rather than exception in recent cases of

gonorrhea in the female. Dr. Sternschneider, of Franzenbad, who examined thirty-four cases of this sort for Neisser, found masses of gonococci in each instance within the urethra.

In the last issue of the PRACTITIONER AND NEWS, copies of which have been distributed at this meeting, I have collated and published what is new in the management of urethral stricture. I shall therefore to-day say nothing on this question further than that, so far, the treatment of stricture by electrolysis has failed to meet that general indorsement at the hands of genito-urinary surgeons that its advocates claim it deserves. In a discussion, November 2, 1887, of Dr. Watson's paper on treatment of stricture, read before the Surgical Section of the Suffolk District Medical Society, in Boston, "Electrolysis, so far as tried or observed by the various speakers, was unfavorably considered." "Internal urethrotomy in cases where stricture was not deeper than five inches was incontestably accorded the first place."

Improvements in the cystoscope have rendered the observation and study of the in-

terior of the bladder measurably easier. Epicystotomy, which has been revived, is, under antiseptic management, a reasonably simple and safe operation. By means of this operation and the cystoscope, Dr. Iversen, of Copenhagen, has successfully catheterized the ureters in the diagnosis of purulent inflammation of the kidneys. The patient suffered no ill effects from the operation, the wound healed, and death supervened later from the renal disease, which was by the exploratory operation found to be of too serious a nature to admit of nephrectomy.

Weir, of New York, has suggested the introduction of a drainage-tube into the scrotum after the ordinary tapping operation for hydrocele, the washing out of the sac with 1–15 carbolic acid and the application of antiseptic dressings, these to remain undisturbed five or six days, the tube to be taken out in nine or ten days. Keyes has made an improvement in his varicocele needle. The Lister operation seems preferable to that of Keyes. It consists in an incision over the cord, just below where it crosses the ramus, and the separate ligation at this point of the two venous trunks found. By this

operation the result is better and the danger of ligation of the spermatic artery as by other methods is avoided. It requires, to be safe or successful, the extremest antiseptic precautions.

Harrison, in his recent Lettsomian lecture on enlarged prostate, demonstrates that the prostate is a funnel-shaped muscle developed at the base of the human male bladder as a retentive floor demanded by the erect posture, and the direct impinging of the urine upon the bladder neck. Its absence in the human female is obvious anatomically, and it has so far been found in the males of no other race, except possibly the dog, where rudiments of it are sometimes detected. This is thought to be due to the peculiar posture the dog assumes when urinating. Mr. Harrison somewhat facetiously remarks that he doubts not but that when the "missing link" is found, he will be found paying the penalty of his advanced state by having enlarged prostate. He compares the prostate to the heart, and speaks of compensatory hypertrophy, drawing the lines of differentiation sharply between this condition and that of fibroid degeneration.

In this matter of prostatic hypertrophy, Belfield has, in an article published in the Record of March 10th, with his characteristic clearness shown how, with comparatively little diffuse hypertrophy, serious obstacles to the outflow of urine may arise in the shape of myomata, analogous to uterine fibroids not discoverable *per rectum*, the so-called middle lobe projecting into the bladder and closing its outlet. In such cases he prefers suprapubic prostatectomy to perineal section, the offending growth to be removed either by the scissors or cautery.

In the treatment of syphilis several questions of interest have received no little attention at the hands of genito-urinary surgeons. Before mentioning some of these it is well to call attention to a most excellent suggestion coming from Dr. Frank Lydston, of Chicago, to the effect that whatever course of treatment you may determine to pursue in any case, the patient should first be sent to a dentist to have his teeth thoroughly cleaned and otherwise put in order.

Mr. Jonathan Hutchinson, the eminent English advocate of the tonic plan of treat-

ment, has recently read a paper on the abortive treatment of syphilis. He declares his belief in the efficacy of small doses of gray powder, continuously given, to suppress or at least greatly modify all secondary manifestations. By beginning with the induration of the initial lesion he has seen this neoplasm melt away and no other symptoms ever become manifest. Bloxam held, in the discussion, that induration of the lesion was of doubtful value from a diagnostic standpoint, but that we should rather rely upon a general and symmetrical enlargement of the lymphatic glands.

Ennucleation of the lesion, while it has many ardent advocates, is by the major portion of syphilographers held to be of little or no avail. Where the sore is situated in the loose skin of the penis its excision may be done, not simply as a preventive of general infection, but that by so transforming the ulcer into a simple sore its healing may be facilitated. Fewer chancres are cauterized each year. Artificial scabbing with an antiseptic dressing of iodoform and bichloride gauze, as recommended by Gerster, is incomparably the best dressing to all except

profusely suppurating sores, whether chancre or chancroid. In the management of the latter the iodoform powder or the moist mercuric gauze freely changed serves the best purpose.

As Dr. Bloom is to read a paper on the Hypodermic Uses of Mercury in Syphilis, I shall content myself with reading Morrow's summary to his elaborate paper on the subject. He says: "My own impression is, that while the hypodermic method will never supplant the classic modes of employing mercury, yet it constitutes a decided acquisition to our therapeutical resources against syphilis too valuable to be ignored or practically disregarded, as has been the case in this country."

Inunction, which is one of the surest modes of mercurialization, and which has been said to be chiefly objectionable because of its uncleanness, has not had this objection in my experience. I have yet to meet the first patient who shall make a complaint of this nature. One can not be too careful here, as elsewhere, in selecting his preparation of the drug. Althaus has shown that mercury combined in an ointment with a

mineral fat is more slowly absorbed by the skin than is the case where an animal or vegetable basis is used. In my hands the mollin hydrargyrum of Merck is the best ointment so far introduced.

Among the new forms of mercury recommended for internal administration are: hydrargyrum carbolicum, oxydatum, and the hydrargyrum salicylate. The former has been as highly lauded as the tannated protoxid was a year or two ago. If it proves as good, it will be a valuable addition to the pharmacopeia.

The treatment of infantile syphilis, and the occasional tardy appearance of congenital syphilis, are questions that have been actively discussed during the year. Of the former, Fournier says:

1. A child born healthy, at least apparently so, having a syphilitic father, should not be treated, because we know that the *paternal* heredity is much less frequent than the *maternal* heredity, and that, consequently, there are chances of its having escaped the syphilis.

2. A child born healthy, or apparently so, of a mother *formerly* syphilitic, and who has

shown no signs of syphilis during her pregnancy, should not be treated ; for, although there may be chances of its being syphilitic, there are also as good chances of its having escaped.

3. A child apparently born healthy so far as external appearances can show, of a woman *recently* syphilitic, especially if she has shown venereal lesions during her pregnancy, should be treated *energetically from the moment of its birth.* For it is certain that, notwithstanding all contrary appearances, the child is syphilitic, and its syphilis, latent in character, may break out at any moment and produce grave accidents, which may even be fatal.

The question of prophylaxis of venereal diseases is being widely discussed, and promises to become a prominent issue in social and political economy in every enlightened country at an early date.

SOME POINTS IN THE MANAGEMENT OF URETHRAL STRICTURE.*

Urethral stricture is one of the most frequent, and often in its ulterior effects one of the most serious of the chronic diseases that come within the purview of the surgeon. The outcome of morbid influences both specific and non-specific, it often demands more than ordinary skill for its accurate detection, and, unrelieved, acts both remotely and directly as the causative and maintaining agent of neurotic states and organic obliquities whose tendencies are to shorten and make miserable human life.

In limiting my subject to-day to the *management* of stricture, I but recognize the impossibility of concisely encompassing the whole field in the short space of time I am expected to occupy. Before entering upon the subject proper of the paper, a few preliminary statements are necessary. Otis,

* Read before the Mitchell District Society, of Indiana, at French Lick Springs, June 22, 1888.

who represents a large modern school of doctrinarians, lays down a number of principles which may be formulated as follows:

Strictures of the urethra should be classified as strictures of small caliber and strictures of large caliber.

Strictures of large caliber can not, as a rule, be detected by the ordinary curved sound.

The diameter of the male urethra varies widely normally in different individuals.

The French law, that a urethra that will receive a 28 F. sound is always a normal urethra, is a pernicious law.

A proportion in health usually exists between the circumference of the penis and the caliber of the urethra.

Many urethras, when normal, have a caliber of from 34 to 36 and even 40 m. Strictures of large caliber in such, or indeed in any urethra, need for their detection and measurement the olive-tipped sound (*bougie à boule*), or, better still, a properly scaled dilating urethrometer.

Strictures of large caliber are common agencies in maintaining a gleet, and in establishing and keeping up other and even more serious morbid states.

The penile urethra is the seat of the great majority of strictures, and the commonest site is within two and a half inches of the meatus, or where the producing clap expended its greatest force.

The cure of gleet and its fellow evils calls for the cure of the stricture, and the cure of the stricture is best accomplished by internal dilating urethrotomy.

In his recent Lettsomian lecture upon stricture of the urethra, Mr. Reginald Harrison advances some original and exceedingly rational views regarding the etiology of stricture and urine fever. The urethra, he says, is normally a water-tight canal—a canal impervious to urine. One of the effects of inflammation or traumatism is a desquamation of the protective epithelium, or a fracture of the urethral continuity, in each case tending to permit an escape of urine into the structure of the penis. To guard against this, plastic lymph is poured out into the submucous layer, closing the leak by its speedy organization. A peculiar feature of this neoplasm is its exceeding contractility, going beyond in this respect the contractility of the cicatricial tissue that ordinarily fol-

lows a burn. To this property is due the frequency and obstinacy of stricture.

"Urine fever," Mr. Harrison suggests as the proper name for that alarming and occasionally fatal febrile state that sometimes follows operative procedure about the urethra and bladder. The following are his deductions:

"(1) That the presence of urine in relation with a recent wound is necessary for the production of urine fever. (2) That the mere contact of urine with a wound is not sufficient for its production. (3) That the retention of fresh urine within the area of a recent wound is almost invariably followed by its development in a greater or lesser degree. (4) That where urine is placed under such circumstances as have been last mentioned, the liability to the development of urine fever is greatly diminished when it is sterilized by local or general means. (5) That the retention of fresh urine, blood, and the *débris* of damaged tissue in the confines of a recent wound for a certain time at a temperature of somewhere about 100° F. could hardly be possible without chemical changes taking place in the

constituents referred to. (6) That there is a common origin for urine fever is rendered probable by the uniformity of the symptoms attending it, which, though differing in degree, are identical, whether following a surgical operation or an accidental wound."

Elsewhere he states: "From my observations in connection with the surgery of these parts, it seems probable that the development of urine fever is really due to the absorption of some such poisonous compound as an alkaloid which is derived either from urine or tissue or wound decomposition, or from all combined."

With these prefatory references and quotations stated, I propose to give you, not a rehash of what is to be found in most standard treatises upon the treatment of stricture, but to put in shape certain results of my own experience, and at times strengthen these by corroboratory statements from other sources.

Nowhere is Listerism, in its broadest and fullest sense, more imperatively demanded than here. Surgical cleanliness, both external and internal, of the patient, and surgical

cleanliness of every surgical appliance should be invariably observed, whether dilatation, divulsion, or urethrotomy be the procedure to be pursued. To accomplish this, two or more means are at our command. The usual antiseptic baths for instruments, and the antiseptic cleansing of the patient's surface, need nothing more than passing mention. The care of the urethra and bladder calls for more detail. For twenty-four hours before any of the above operations the urine should be sterilized by the administration of full doses of boric acid, say fifteen grains every three hours. Where the passage of a catheter *per urethram* is possible, the bladder should be distended immediately before the operation, by means of a fountain syringe and catheter, with eight or ten ounces of super-saturated solution of boric acid at a temperature of from 100° to 105° F.; and after the withdrawal of the catheter the patient should be required to expel the fluid as if urinating. This not only still further renders the parts aseptic, but prepares the urethra for the better absorption of the cocaine, of which a four-per-cent solution retained in the canal

for fifteen minutes will be found, in a majority of cases, all-sufficient for anesthesia.

Immediately after either of the above-named operations the urethra and bladder should be washed again, either with the same solution or a 1–20,000 or 1–30,000 hot bichloride injection. So long as danger of sepsis exists the urine should be withdrawn each time with a clean catheter, its escape being followed by a boracic injection, which, the catheter being now withdrawn, the patient passes through the surgically injured canal. I feel justified in insisting upon all of these precautionary measures in either form of operative procedure, from the belief that whether the operation be rapid dilatation or divulsion or cutting, the leakage of Harrison must be almost invariably established.

The internal administration of boric acid, begun the day before the operation, should not cease until all danger of sepsis is passed. The dose may be diminished to ten grains three times a day. Its powers as an internal sterilizer of urine are too fully established to call for proof here. The statements of authorities that from five to eight per cent of urethrotomies prove fatal, and

that urine fever is the most frequent cause of this fatality, is reason enough for all this care.

Should sepsis supervene, what are its dangers, and how shall it be treated? Its prime danger is urinary suppression. Suppression is almost certain, and death is equally sure if profound disease of the kidneys exists, but it goes without saying that this point has been already looked into before the operation. Where, however, the kidneys, as shown by autopsy, are to all appearances sound, there may come with the shock of fever suppression and death. Where suppression does not intervene, even though a temperature of 105° F. be attained and prostration be profound, recovery may be expected. When we reflect upon the conditions that prevail, anatomical, surgical, and morbid, nothing can seem clearer than the indications for treatment. No disease in the category of surgery is more practically local and more easily within the reach of remedial agencies. The factors that produce it are three in number: decomposing urine, a leaky urethra, and the factor most overlooked, an organ exquisitely endowed with

nervous elements and intimately connected with the entirety of the finer and more delicate portions of our framework. The surcease of pain that follows the extraction of an aching tooth, or the splinter of wood in an unguial matrix, is no more certain than the abatement of urine fever by the prompt and thorough application of local measures. At the onset of the chill, or in the height of the fever, the treatment is the same—first a warm antiseptic cleansing of the bladder and urethra, as before described, and then free irrigation of the urethra with 1–15,000 or 1–10,000 bichloride solution at a temperature of 110° F. No internal treatment can compare with this, whose certainty of relief is based upon local origin and the ability of the surgeon to combat the cause in its immediate domain of action.

Hemorrhage, especially after internal urethrotomy as far back as the bulb, has been much written about, and I think, as regards its danger, much overestimated. By bandage or by the perineal crutch it is comparatively easy of control, and certainly so where the urethrotomy has been properly performed. To illustrate what I mean, we

will suppose a case of multiple annular stricture of the penile urethra extending back some five inches or more into the neighborhood of that great bugbear the artery of the bulb. The normal caliber is 32 F. The strictures vary from 21 F. to 24 or 26, strictures of large caliber. The Otis dilating urethrotome, which is the best, is to be used. Now it does not follow that because the normal caliber is 32, and the band to be cut 21, that an incision to the depth represented by the difference between these two numbers is to be made. Not infrequently a quite thin contracting band parts when cut after slight tension is made, and further easy expansion of the blades shows a free canal. To Wyeth, of New York, I think the credit is due of suggesting this gradual and repeated dilatation and cutting at one sitting until the normal elasticity is felt untrammeled, as it often may be before more than a thin band of fibers has been cut. I have long since ceased to forcibly expand my urethrotome to the full caliber of the canal, that I might thus cut all at one dash.

It is not my purpose to-day to advocate

any method of treatment as much as it is to give some practical outgrowths of my experience in managing details, yet I can not help from quoting from Mr. Harrison, who is evidently by his writings a believer in dilatation rather than internal urethrotomy in the pendulous urethra. He, in speaking of the formation of stricture, says that often the mucous membrane is not involved at all, the contraction being wholly submucous, and that thus "it is possible to split a stricture without necessarily damaging the mucous membrane." Again, he formulates the maxim that "a linear cut is not contractile."

I was speaking of the dangers of hemorrhage. It is the rule in internal urethrotomy, as laid down by Keyes, to cut below at the meatus, above in the pendulous urethra, and below in the curved. A good rule, yet one not commonly observed, as most of the Maisonneuve urethrotomes made for cutting deeply are grooved above. Such an one has been frequently used by me with no ill results. A point recently stated by Bull, of New York, is worthy of mention here. It is, that with the latest pattern of

Otis' instrument one can not cut behind the bulb, even though he carry the instrument as deep as possible.

All strictures do not call for active operative procedures. There are acute congestive strictures, and there are strictures of large caliber that are discovered accidentally and are doing no harm. Against meddling with these, and especially against operative procedure with the former, I must raise my voice. It is the old-established stricture, steadily contracting year by year, maintaining a gleet or a cystitis, or some phase of sexual neurasthenia, that should be dealt with surgically; and that dealing, to my mind, should be by the knife, by internal urethrotomy.

There are still further points I would emphasize in the matter of management. I did an internal urethrotomy some two years ago on a young fellow, who, within a week subsequent to the cutting, developed a furious gonorrhea. Since that time I have made it a rule not to operate within fourteen days subsequent to a suspicious intercourse upon the part of the patient.

As a rule, a stricture when properly cut

does not return. This is not, however, an invariable rule, and so I think it well to provide the patient with a conical straight sound, six inches long, of the size of his canal, with direction that it shall be passed once a month, possibly twice, for a year or two years afterward. I have recently had opportunity to examine a number of cases operated upon by me two years ago, and have in not a few found the canal still larger from absorption of the neoplasm than it was shortly after the operation was performed.

Meatotomy, or, as Gouley calls it, by a more euphonious name, porotomy, is an operation whose management demands passing notice. The necessity for it is laid down by the proper authorities. When carelessly done, the incision is apt to be oblique or irregular. To avoid this, the probe-pointed bistoury should be sharp, and the cut should be toward the operator's left thumb that presses crosswise against the frenum. Care should be taken to cut at the same time the congenital stricture that usually exists from a fourth to a half inch back of the meatus, to avoid cutting the artery of the frenum, and not to too widely mutilate the ostium.

In treating by gradual dilatation, the rule generally laid down by authorities, namely, not to force in a too-tightly-fitting sound, is a most excellent one. It was the elder Gross who characterized the passage of the sound as the most difficult and delicate operation that the surgeon is called upon to perform. Said Gouley to me a year ago: "If it is the hundredth time that I pass the sound into the same urethra, I exercise the same care and gentleness then that I did at its first introduction."

These are good teachings. The custom of placing a curved sound in the hands of a patient, to be passed at intervals by himself, is, to say the least, a risky procedure. False passages are much more frequently produced even at the hands of the surgeon than is commonly taught. In this mode of treatment great patience upon the part of both the surgeon and the strictured is necessary. Months often elapse before the desired dilatation is attained, and not infrequently then does recontraction take place. Now and then a stricture of considerable proportion is met with that yields rapidly and permanently to the sound, but such are

indisputably rare. In making a prognosis before beginning gradual dilatation, it is well to remember that stricture tissue in the penile urethra is much more obstinate and much more apt to recontract than that farther back in the curved portion.

In the matter of divulsion I will simply quote from Keyes, in his latest work, where he says, "It is a rough maneuver, and has of late years lost favor among surgeons."

Thus far I have confined myself to the management of such strictures as are operated upon from within the urethra. External or perineal urethrotomy for impervious stricture of the membranous or prostatic urethra can hardly be dealt with to-day without too far taxing your patience. The rules of antiseptic management are practically the same here as in internal urethrotomy, with the possible exception that, owing to free drainage, the danger of sepsis is materially lessened. Care to the extent of free cystotomy should be taken to secure good drainage; and for the same reason, in the after-treatment it should be seen that the perineal wound does not close too soon. The operation is not a specially difficult or dan-

gerous one, except where its performance is required without the help of a staff. For my own part, based upon recent experience, I question but what in such cases a supra-pubic cystotomy offers better chances to the patient and better opportunities to the surgeon.

THE SPECIFIC MICROBE OF GONORRHEA.*

The discovery of the specific microbe of gonorrhea was announced by Neisser, of Breslau, in 1879. The usual destiny of the pathogenic microbe in science awaited it. It was accepted by some, denied by others, and laughed at by that numerous body of scoffers who still hesitate to see any causative relationship between the tubercle bacillus of Koch and phthisis. It was 1883 before much attention was shown the gonococcus in this country, and then the tendency was adverse to its diagnostic value, owing to the positive statement of Sternberg, that it was in nowise different from the ordinary micrococcus, described by Pasteur, that is uniformly present in urine and acts as the agency in fermentative decomposition of urea.

In November, 1886, Dr. Roux, at a meet-

*Read before the Louisville Surgical Society, February meeting, 1888.

ing of the Paris Academy, formulated a method, already given by me in full in my State Society paper for 1887, by which means the individuality of the specific gonococcus is established from that of similar and associate microbes. It, like most of the germ tests, is chemical in its nature, in this particular instance depending upon the fact that, after staining a specimen containing these germs, and fixing the stain, the microbe will, when subjected to alcohol, bleach in company with the ordinary anatomical elements of the specimen, while other cocci of similar size and arrangement remain stained in the midst of the pale decolorized elements. With the kind and valued assistance of Mr. Simon Flexner I am prepared to show you to-night cocci of both kinds, and to demonstrate the difference in their affinity for methyl blue. Our literature upon the subject has increased rapidly of late, and, in my belief, the gonococcus is quite as much entitled to a place in scientific bacteriology as the anthrax bacillus or the tubercle bacillus of Koch.

The germs in question are described as "spherical organisms about eight micro-millimeters in diameter, generally forming dumb-

bells or sarcina-like colonies of four. Several of such groups form a zoöglea. They adhere to the pus corpuscles and epithelial cells." (Klein.)

An interesting case is reported by Aufucht of a child, twelve days old at death, wherein the umbilical vein, liver, and interlobular tissue were found filled with microbes identical with the gonococcus. He believes that the child was infected from the vagina of its mother. Gonococci are found in gonorrheal pyosalpinx and gonorrheal arthritis.

Bockhart succeeded in inoculating three out of six students. He also cultivated on gelatine and inoculated a paralytic patient with the fourth culture, with a resulting gonorrhea on the sixth day. Dr. Belfield, of Chicago, suggests that Sternberg's failure to obtain like results is due to his employing a liquid rather than a solid culture medium.

Beside gelatine, stiffened blood serum may be used for culture, as has been done by Hausmann. Ophthalmologists quite generally accept the gonococcus as the pathogenic agency in ophthalmia neonatorum. Here, as elsewhere, it penetrates beneath the epithelium, destroying it and exciting free suppuration, by

which its rapidly-multiplying progeny are washed out of the part. It is a fragile organism, soon dying when removed from vital surroundings, and so can not be charged with infection through the air. It is exceedingly doubtful if infection can take place except from person to person, in a reasonably direct and immediate manner.